IR-CENTRIC®

Total Protection. And Then Some

Elbit Systems EW and SIGINT - Elisra's cutting edge IR-based family of solutions consists of:

PAWS (Passive Airborne Warning System) Family
The PAWS Family (PAWS and PAWS2) of infrared-based Missile Approach Warning Systems (MAWS) enhances Helicopters, Transport Aircraft and Fighters survivability by providing advance warning about threatening missiles. Using infrared imagery and signal processing, it detects and tracks an incoming missile's hot plume as it appears within the landscape background surrounding the aircraft. Evaluating the missile's trajectory, PAWS discriminates between threatening and non-threatening missiles. When it detects a threatening missile, PAWS alerts the aircrew with a warning signal and automatically activates countermeasures.

SWAD (Small Arms Fire Warning & Direction System)
SWAD is a passive stationary electro-optical system protecting high value infrastructure and strategic areas by providing warning upon detection of fire shot from small rifles, carbines, sub-machine guns as well as various other small arms and by providing direction towards the source of fire.
Upon detection, SWAD analyzes the small arms fire patterns, including their duration and intensity, and classifies the type of weapon being used. By employing sophisticated imaging and processing techniques, SWAD precisely locates the flash sources to assist in identifying shooter location for fast and efficiently threat-source elimination.

TANDIR (Advanced Threat Warning System for Combat Vehicles)
TANDIR is a highly-effective, affordable passive warning system for Combat Vehicles. By providing early and accurate alerts for anti-tank threats and seamless integration with Hard-Kill and Soft-Kill systems, TANDIR enhances the survivability of Tanks, Armored Fighting Vehicles (AFVs) and other Combat Vehicles.
Incorporating the latest IR technologies for the first time in military vehicles, TANDIR enables ultra-fast, high precision day and night identification of incoming threat as well as optimal on-time and on-target countermeasures initiation for maximum survivability in the battlefield.

G-FORCE (Ground-Based Protection Shield)
Aimed for the protection of defined areas such as airports, sensitive installations etc, Elisra's G-Force concept tackles the missiles challenge from the ground -creating a ground-based "protection-shield". It detects the threat, locates its position continuously and integrates with ground-based active countermeasures to thwart the attack.

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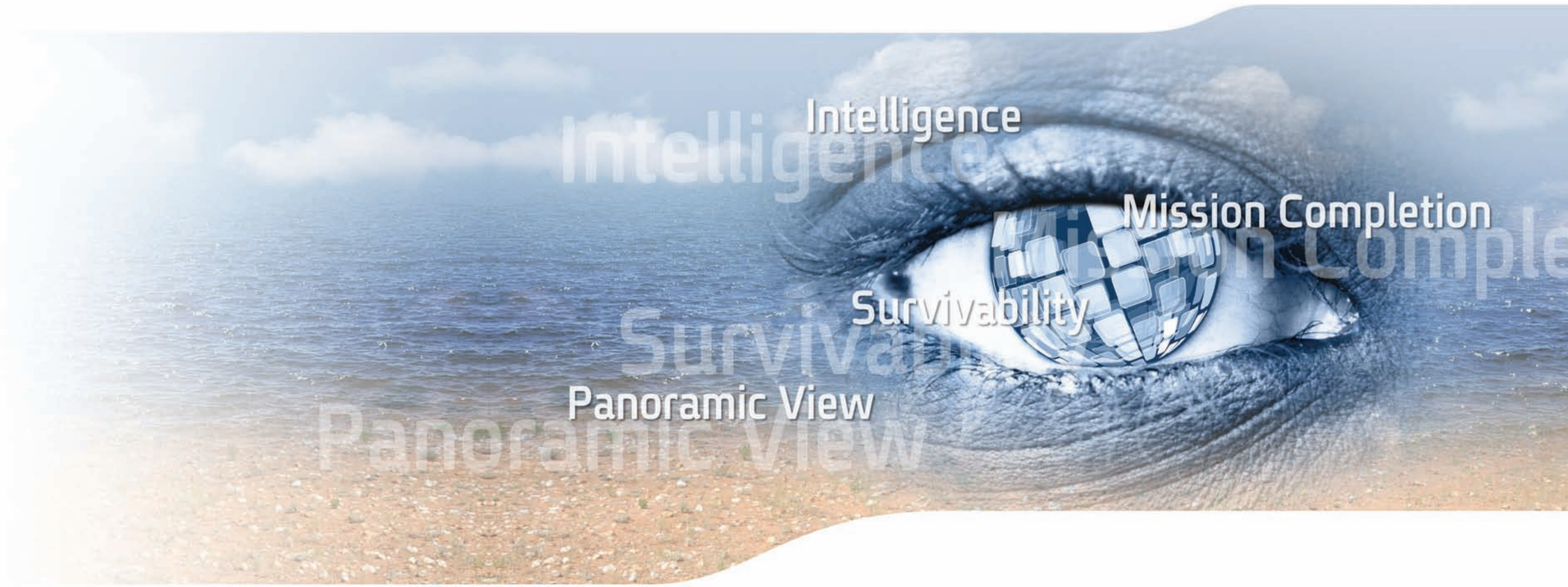

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Evolving from over two decades of technical and operational experience in developing, delivering and fielding of infrared-based self-protection and mission-enhancement systems, Elisra is introducing its revolutionary IR-CENTRIC® solution.
IR-CENTRIC® utilizes the foundations of the de-facto standard in missile warning systems, an infrared-based Missile Warning System (IR MWS), to harness the information streamed from its sensors for facilitating a multi-role multi-function nexus, mission, protection and safety enhancement from one single system while responding to most modern airborne and ground operational requirements.

While a traditional MWS filters out all non-threat-related data and remain with emitter point source detection only, IR-CENTRIC® applications make use of this data to support their functionality. The type and magnitude of such data differs from application to application.

IR-CENTRIC® partial capabilities:

Enhanced Missile Warning - for Optimal Protection
Main IR-CENTRIC® capability is the passive detection and tracking of approaching missiles. Upon detection of such missile, the system alerts the crew and automatically activates available countermeasures. The usage of IR technology provides the combination of maximum detection range, lowest false alarm rate at all altitudes, scenarios and sceneries, highest probability of detection, on-time flares dispensing and fastest and most accurate laser DIRCM cueing. Un-matched protection for platform is achieved against what is known to be the #1 cause for platforms shoot-down in recent decades.

Enhanced Hostile Fire Detection - for Even Better Protection
Hostile Fire (HF) threats, such as Rocket Propelled Grenade (RPG) and heavy machine guns, become a greater risk to platform survivability in recent years. As a result, the need for immediate solutions has become a worldwide challenge. As the firing of most kinds of munitions involves the generation of an IR radiation, The system can detect it while allowing discrimination of different sources and types and prioritization for warning alerts.

Panoramic View of the Battlefield - Creating Situational Awareness
The ability to provide the platforms crew with two other mission-critical features: the "All Around See Through" – providing detailed thermal imagery monitoring of the surrounding area and "All Time See Through" – providing day and night view, enhance crews situational awareness (360 deg), performance and interaction with other platform-specific systems.

Collision Alert – Enhancing Flight Safety
With its ability to provide real-time processing of the real-time streaming imagery representing the surroundings of the platform, tracking and monitoring of close-by platform (such as helicopters in formation) becomes possible. Using special algorithms, estimation of these collision-potential sources is made – allowing the issuance of audio-visual alert upon penetrating own-ship surrounding safety zone.

Navigation Support
IR Sensors ability to track images provides a detailed map of the area around the platform. In particular, a number of prominent edges and counters can be pinpointed. While platform moves, these points and lines change their position within the image. Monitoring this data can provide accurate tracks of the platform motion enabling some navigation compensation. This capability improves navigation quality reducing the need for expensive independent navigation suite.

Battle Damage Assessment - Record, Analyze and Learn
With IR-CENTRIC® you are able to record streaming and still IR image data and analyze it carefully offline. Following mission debriefing , the use of these images can provide better bombing damage assessment, peer performance and cooperation review, hostile intrusion trends and it can even supply data on changes taking place within battlefield arena.

Mission Support
Up in the air or down on ground, manned or unmanned platforms - with IR-CENTRIC® , mission enhancement for attack, utility, support or any other platform is guaranteed. More info will be provided for this capability upon request.